

August 12, 2008

Ms. Jennifer Sutter
Oregon Department of Environmental Quality
2020 SW Fourth Avenue, Suite 400
Portland, OR 97201-4987

**Subject: Swan Island Upland Facility
Operable Unit 2 Outfalls
ECSI No. 271**

Dear Ms. Sutter:

On March 3, 2008, the Port of Portland (Port) submitted a February 13, 2008 memorandum prepared by Ash Creek Associates (ACA) that provided historical information on outfalls located on Operable Unit 2 (OU2) of the Swan Island Upland Facility. Between March 18, 2008 and April 29, 2008, the Oregon Department of Environmental Quality (DEQ) issued three comment letters regarding these outfalls. DEQ's comments are presented in italics, followed by the Port's response.

March 18, 2008 Comments

- 1. Discharge pipes that are no longer in use should be physically abandoned. This might warrant video-logging the lines from the outfall up to determine the terminus; but at a minimum should include cutting off and plugging the ends. The work will require a plumbing permit from the City of Portland's Building and Development Services Department.*

As was discussed in the February 13, 2008 ACA memorandum, the Port evaluated available site records on historical drainage features and conducted flow and dye testing of the OU2 parking lot drainage system. Based on these activities, the Port was able to determine the current status and areas drained by two of the five outfalls located on OU2 (i.e., WR-163 and WR-399).¹ The other three outfalls (i.e., CG-26, CG-27 and WR-159a) were determined to be inactive, and although extensive research was conducted, the areas historically drained by each outfall remain unknown. It is unclear whether these outfalls historically drained areas on OU2, or whether they were connected to drainage points along N. Channel Avenue, on facilities north of N. Channel Avenue or even drainage points that could have superseded the infrastructure related to N. Channel Avenue (i.e., U.S. Maritime Commission-related shipyard operations during WWII). It is possible that these outfalls do not belong to the Port. Regardless, it appears that the most direct way of addressing DEQ's concern about these outfalls is to cut off and plug the ends of outfalls CG-26, CG-27, and WR-159a. It should be noted that WR-159a was a temporary field designation for the outfall and it has been

¹ Note that as of June 27, 2008, the property which drains through outfall WR-399 was sold by the Port to Shipyard Commerce LLC (Cascade General). That property is now being handled as Operable Unit 4.

renumbered to WR-473 by the City of Portland in the recent update to its outfall GIS layer.

2. *To assess if there were significant historical releases from active and abandoned outfalls that may have resulted in shoreline contamination that could erode into the river, sampling of the shoreline consistent with the sampling previously conducted to evaluate the parking lot drainage pipes should be completed. The proximity of the WR-159a outfall to the sampling conducted to assess impacts from WR-159 should be considered in determining the need for shoreline sampling at this location or whether it may be of value to collect sampling further to the south to assess the significance of the metals and PCBs detected in the vicinity of the active outfalls as well to assess historical releases. This could be of particular value at the WR-399 location where you are pursuing a no further action determination prior to sale of the northern portion of the OU2 property.*

See response to DEQ's April 29, 2008 comment, below.

3. *Existing maintenance practices at all active storm lines should be documented. This would include frequency of catch basin and pipe cleaning, date of most recent cleanout, and controls such as filters that are present in catch basins, and sampling data for material removed from pipes and catch basins for disposal characterization.*

The Port will provide this information for the catch basins connected to outfall WR-399 to DEQ as part of its documentation of the Operable Unit 4 (OU4) stormwater system cleanout of the Freightliner Leasehold (completed May 5 and 6, 2008) and one-time stormwater sampling event (completed June 3, 2008). These activities were completed prior to the sale of the OU4 property to Shipyard Commerce LLC. The portion of OU4 leased to Cascade General prior to the sale, was also cleaned out in the fall of 2007 by West Coast Marine Cleaning (under subcontract to Cascade General).

The Port will also provide this information for the one catch basin connected to outfall WR-163 in the source control evaluation for OU2.

4. *A final system cleanout of the active stormwater system (both pipes and catch basins) on the northern portion of the property prior to property transaction should be conducted. Material removed should be characterized for petroleum, polycyclic aromatic hydrocarbons, phthalates, metals, polychlorinated biphenyls, and tributyl tin as a final check of the need for any upland actions prior to proceeding with a no further action determination.*

The pre-sale OU4 stormwater system cleanout discussed above in response three included collection of a composite sediment sample collected from the onsite catch basins. In addition, the portion of OU4 leased to Cascade General prior to the sale, was cleaned out in the fall of 2007 by Cascade General. The composite sediment sample was submitted for the following analyses.

- Total Polychlorinated Biphenyls (PCBs) and aroclors by EPA Method 8082;
- Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8270M-SIM;
- Metals by EPA 6000/7000 Series Methods (including aluminum, antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc);

- Phthalates by EPA Method EPA Method 8270M-SIM;
- Total Petroleum Hydrocarbons (TPH) as gasoline by Northwest Method NWTPH-Gx;
- Diesel and oil-range TPH by Northwest Method NWTPH-Dx (with silica gel cleanup); and
- Tributyl Tin (TBT) by Krone Method.

These results are included in the No Further Action request for OU4.

April 10, 2008 Comments

1. *The Port questions the need to formally abandon outfall pipes that appear to no longer be in use. DEQ's interest in these pipes stems from the need to assess all potential contaminant pathways. To make this determination, we either need to have the lines (as well as any laterals and portals) mapped, or we need to be confident that they do not have the potential to be a conduit for contaminants (i.e., be formally abandoned). Although you have not observed flow coming from these pipes, this is not a confirmation that flow does not or could not occur. We continue to recommend that the lines be cut and plugged. At a minimum the lines should be camera logged to assess their terminus to ensure that they do not provide a conduit for contaminant movement into the river.*

See response to DEQ's March 18, 2008 Comment 1, above.

2. *The Port questions the need to analyze material removed from the stormwater system for tributyl tin (TBT) based on lack of sources on this property. Because TBT was detected in all catch basins sampled by Cascade General on the adjacent Operable Unit 1, TBT should be included in the analytes evaluated in the material removed from the OU2 system, if only to assess impacts associated with air deposition.*

See response to DEQ's March 18, 2008 Comment 4, above. The results of the analysis for TBT are addressed in the OU4 NFA request letter.

April 29, 2008 Comment

This letter provides some further clarifications regarding the outfall evaluation for Operable Unit 2. In our March 19, 2008 letter we suggested sampling of the shoreline in the vicinity of the outfalls to assess if there is contamination associated with stormwater discharge that could erode into the river. We did not require this sampling because we assumed that this area was outside the definition of the upland site and would not be part of the source control evaluation. However, because it has been determined that a portion of the beach area along the shoreline lies above the Ordinary High Water (OHW) line of the Willamette River (the boundary for the upland facility as specified in the Voluntary Agreement between the Port and DEQ, LQVC-NWR-06-07), we are requiring the sampling to fully evaluate whether erosion of shoreline soil is a pathway that will need to be controlled as part of the source control evaluation for this site. Should contamination associated with the outfalls be identified at levels that could pose a threat to the river, we note that the most sensible approach to addressing this localized source area might warrant sampling and potentially cleanup below the OHW.

The Port will collect riverbank samples beneath those outfalls with an invert above the OHW line, as is the case for outfalls WR-399, CG-26, CG-27 and WR-159a (Figure 1).

These outfalls are located approximately 10 feet or less, from the top of the riverbank. The end of outfall WR-163 discharges to the Willamette River near the bottom of the riverbank, below the OHW line. The sampling approach to be used at outfalls WR-399, CG-26, CG-27 and WR-159a will be consistent with the approach previously used at the three stormwater pipes that were removed by the Port in 2006 (i.e., outfalls WR-159, WR-160 and WR-164).

As requested in Comment 2 of DEQ's March 18, 2008 letter, the Port did consider the proximity of outfall WR-159a to former outfall WR-159 in its evaluation of shoreline sampling in the vicinity. It appears that outfall WR-159a is not close enough to former outfall WR-159 to allow the riverbank sampling results for outfall 159 to be used for outfall WR-159a.

Three soil samples will be collected from the riverbank below each outfall. The samples will be labeled "a", "b" and "c." The "a" sample will be collected near the top of the riverbank just below the end of the outfall. The "c" sample will be collected at an elevation corresponding to Ordinary Low Water², or approximately one to two feet above the river, whichever is lower. The "b" sample will be collected approximately halfway down the riverbank between the "a" and "c" samples.

Aliquots of each "a", "b" and "c" sample will be combined in the laboratory to create a single composite sample for each outfall. The discrete samples will be retained. Because outfall WR-159a may have drained the same portion of OU2 as the three stormwater pipes (WR-159, WR-160, and WR-164) that were removed in 2006, the composite sample collected at outfall WR-159a will be analyzed for the same constituents as the samples collected below the three stormwater pipes: metals (antimony, arsenic, cadmium, chromium, copper, lead, nickel, silver and zinc), total petroleum hydrocarbons, polychlorinated biphenyls (PCBs) and polynuclear aromatic hydrocarbons (PAHs). The samples collected below the other three outfalls (i.e., WR-399, CG-26 and CG-27) will be analyzed for the following constituents.

- Total PCBs and aroclors by EPA Method 8082;
- PAHs by EPA Method 8270M-SIM;
- Metals by EPA 6000/7000 Series Methods (including aluminum, antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc);
- Phthalates by EPA Method 525.2;
- TPH as gasoline by Northwest Method NWTPH-Gx;
- Diesel and oil-range TPH by Northwest Method NWTPH-Dx (with silica gel cleanup); and
- TBT by Krone Method.

² According to the City of Portland Willamette Riverbank Design Notebook: Portland, Oregon dated May 2001, the Ordinary Low Water elevation is +3 feet City of Portland (COP) datum. According to information at <http://www.nwd-wc.usace.army.mil/perl/dataquery> for the Willamette River gage at Portland, the COP datum is 2.9 feet higher than gage zero. Thus, Ordinary Low Water is approximately equal to gage zero for the Willamette River at Portland gage.

Ms. Jennifer Sutter
August 12, 2008
Page 5

The laboratory analytical results for the composite samples will be compared to DEQ's Soil/Stormwater Sediment SLVs found in Table 3-1 of the Portland Harbor Joint Source Control Strategy (JSCS). If the concentration of a constituent in the composite sample exceeds its JSCS SLV, the laboratory will be instructed to analyze the individual samples for that constituent.

Please give me a call if you have any questions regarding our responses to your comments.

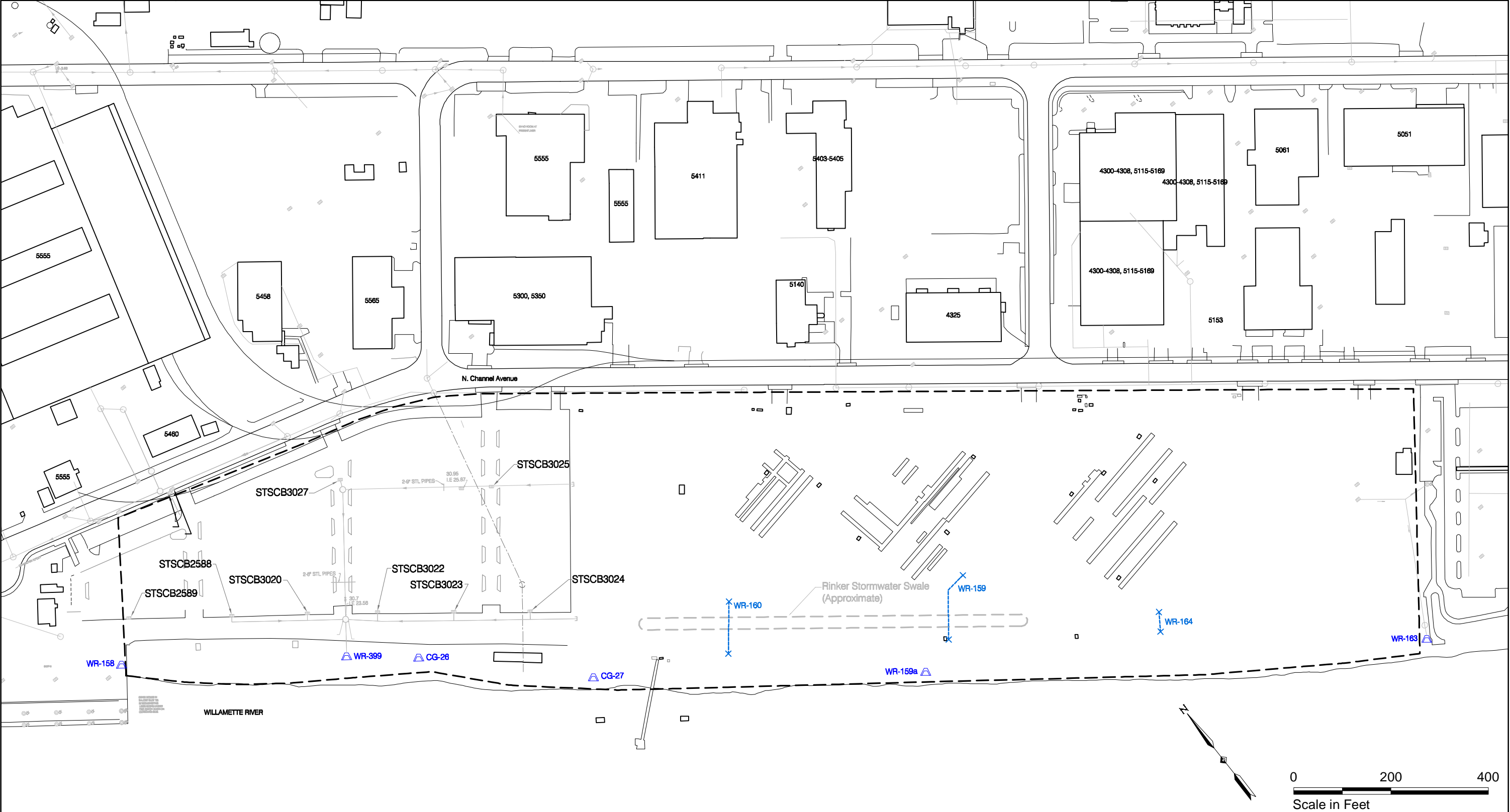
Sincerely,

A handwritten signature in cursive script, appearing to read "Kelly Madalinski".

Kelly Madalinski
Environmental Project Manager

Attachment: Figure 1 – Outfall Locations

c: Kristine Koch, EPA
David Ashton, Port
Suzanne Barthelmess, Port
Nicole LaFranchise, Port
Richard Vincent, Port
Michael Pickering, Ash Creek Associates
Stu Brown, Bridgewater Group
Mark Lewis, NewFields
LWP File



Legend:

- WR-399
-
-
-
-

Outfall Location and Designation
Catch Basin Location
Manhole Location
Drain Location
STS Location and Flow Direction (Port of Portland)

- WR-160
-
-

Storm Water Pipe Location and Designation
(Abandoned July 2006)
Historical STS (STS = Storm Sewer)
Operable Unit 2 Boundary

NOTES:
1. Prepared from AutoCAD base map received from the Port of Portland in June 2007.
2. Outfall locations from Integral Consulting, Inc. GIS Export received by email on November 21, 2007.

Outfall Locations

Operable Unit 2
Swan Island Upland Facility
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1115	Figure
July 2008		I